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INTERDISCIPLINARY APPROACH IN PEDAGOGY: CHARACTERISTICS

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Abstract

This article discusses the essence of the interdisciplinary approach, learners' analytical thinking skills, and their pedagogical features.

Keywords

interdisciplinary approach, interdisciplinary connections, analytical thinking skills

The interdisciplinary approach refers to a method that involves collaboration between different disciplines or fields of knowledge, helping to study problems in a multifaceted and comprehensive way. The history of this approach dates back to the late 19th and early 20th centuries. Its essence lies in integrating the methods and theories of one discipline with others, which allows for obtaining more complete and in-depth knowledge. For example, when studying a medical issue, cooperation between biology, chemistry, psychology, and sociology enables a deeper understanding of the problem.

The interdisciplinary approach is important because it fosters new ideas and innovative solutions in both research and practice. Its main principles include:

- Integration: combining knowledge, theories, and methods of different disciplines to better understand a problem from multiple perspectives.
- Collaboration: effective cooperation among specialists from different fields, requiring teamwork and sharing of expertise.
- Problem-oriented approach: focusing on solving specific problems, with all disciplines contributing toward common goals.
- Elimination of disciplinary boundaries: reducing rigid boundaries between fields and encouraging open, integrative learning.
- Diversity of scientific methods: using various research methods such as experimentation, analysis, and modeling.

• Innovation and creativity: promoting the development of new ideas and innovative solutions.

• Social and ethical responsibility: addressing socially significant issues and aiming to benefit society.

The interdisciplinary approach reflects efforts to solve challenges in science and education, find new solutions, and develop learners as broadly skilled and critical thinkers. Over time, this approach has evolved, adapting to new goals and directing them toward practical and social solutions. Today, it has become an integral part of education.

The theory of the interdisciplinary approach is aimed at studying problems comprehensively by integrating methods, ideas, and theories from different disciplines. According to this theory, combining knowledge and skills across fields and understanding their interconnections enables effective problem-solving.

The main ideas of this theory include:

• Many problems are complex and cannot be solved within a single discipline, requiring integration of multiple fields.

• The interdisciplinary approach stimulates the development of new hybrid fields such as bioinformatics, ecological engineering, and neuropsychology.

• The effectiveness of interdisciplinary collaboration: specialists working together can better understand problems by combining strengths from different fields.

• Integration as a central component of research, where disciplines function in a connected rather than isolated manner.

• Generating new knowledge and ideas by going beyond the boundaries of a single discipline.

• Creating new models, concepts, and universal approaches through the synthesis of different theoretical perspectives.

According to this theory, each problem is unique and its solution depends on the interaction of multiple disciplines. Therefore, it is important to study problems in their specific context. Collaboration among specialists is essential for a complete and accurate understanding, leading to the integration of new knowledge and experiences.

The interdisciplinary approach enables the development of innovative ideas, new methods, and technologies. The integration of disciplines often forms the basis for innovative solutions aimed at addressing real societal problems. This theory requires a comprehensive approach to research and practice and is oriented toward generating new knowledge and solutions.

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Scholars who have made significant contributions to the interdisciplinary approach include Jean Piaget, Norbert Wiener, Edgar Morin, Gregory Bateson, and Ken Wilber, who developed new theories and practices by integrating knowledge from various fields.

In pedagogy, applying the interdisciplinary approach allows for integrating different subjects, making the learning process richer and more effective. It helps develop learners' comprehensive knowledge and skills and enhances their ability to solve complex problems.

Key aspects of applying the interdisciplinary approach in pedagogy include:

- Problem-based learning: integrating disciplines to address real-world issues, such as combining natural sciences, geography, economics, and sociology to study environmental problems.
- Real-life relevance: connecting knowledge from different subjects to practical, everyday applications.
- Development of critical thinking: analyzing problems from multiple perspectives enhances logical and critical thinking.
- Encouraging innovation: fostering creativity and the ability to generate new ideas.
- Communication and collaboration skills: promoting teamwork and effective interaction among learners.
- Understanding connections between disciplines: helping students see how different fields are interrelated.
- Development of universal competencies: building skills such as communication, collaboration, research, and problem-solving.

The use of the interdisciplinary approach in pedagogy enhances innovation and creativity in education, improves learners' thinking abilities, and prepares them for future success.

Examples of interdisciplinary pedagogy include:

- "Ecology and Biology": students study environmental protection by integrating biology, chemistry, and geography. They analyze chemical reactions of water pollution, global distribution of water resources, and ecological impacts on ecosystems.
- "Architecture and Mathematics": students apply geometry concepts by designing architectural structures, combining mathematics with art and design.
- "Technology and History": students explore historical technologies and connect them with technological development across different eras.

These examples demonstrate the importance of the interdisciplinary approach in education. Students learn to integrate knowledge from different disciplines and solve real-life problems effectively.

In conclusion, the interdisciplinary approach theory focuses on integrating knowledge and methods from various disciplines to study problems deeply and comprehensively. Its main goal is to reduce boundaries between fields, strengthen their interconnections, and develop a holistic approach to problem-solving.

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